Semester-wise Course Structure

(w.e.f. 2025-26)

(Program: B. Tech. in Chemical Engineering: Major in Petrochemicals & Polymer Engineering)

Batch: 2024-28

Semester 1 (1st Year: Odd Sem)

Course/Subject	L	T	P	Cr
Classical Physics (IS) (PY111)	3	1	0	11
Inorganic & Physical Chemistry (IS) (CY121)	3	1	0	11
Applied Mathematics-1 (IS) (MA123)	3	1	0	11
Engineering Thermodynamics (IE) (CH161)	3	1	0	11
Physics Lab (IS) (PY111L)	0	0	2/2	1
Chemistry Lab (IS) (CY111L)	0	0	2/2	1
Workshop Practices (EP) (ME131)	0	0	3	3
Total Credits				**49**
Universal Human Values (HU) (HU101)	1	1	0	5

Semester 2 (1st Year: Even Sem)

Course/Subject	L	T	P	Cr
Modern Physics (IS) (PY121)	2	1	0	8
Organic and Hydrocarbon Chemistry (IS) (CY111)	3	1	0	11
Applied Mathematics-2 (IS) (MA124)	3	1	0	11
Computer Programing (IE) (CS101)	3	1	0	11
Fluid Mechanics (IE) (CH121)	3	1	0	11
Physics Lab (IS) (PY121L)	0	0	2/2	1
Chemistry Lab (IS) (CY121L)	0	0	2/2	1
Computer Programing Lab (IE) (CS101L)	0	0	2	2
Petrochemicals & Polymer Engineering Practices (DC) (CH113)	1	0	2	5
Engineering Graphics (EP) (ME121)	0	0	3	3
Total Credits				**64**
Community Internship (HU) (HU102)	1	1	0	5

Semester 3 (2nd Year: Odd Sem)

Course/Subject	L	T	P	Cr
Applied Mathematics-3 (IS) (MA222)	3	1	0	11
Fundamentals of Electronics Engineering (IE) (ECE102)	3	1	0	11
Chemical Engineering Thermodynamics (DC) (CH262)	3	1	0	11
Mass & Energy Balances (DC) (CH171)	2	1	0	8
Fluid Flow and Mechanical Operations (DC) (CH224)	3	1	0	11
Fluid Flow and Mechanical Operations Lab (DC) (CH224L)	0	0	2	2
Fundamentals of Electronics Engineering Lab (IE) (ECE102L)	0	0	2	2
Total Credits				**56**

Semester 4 (2nd Year: Even Sem)

Course/Subject	L	T	P	Cr
Materials Science and Strength of Materials (DC) (CH212)	3	0	0	9
Mass Transfer Operations-1 (DC) (CH274)	3	1	0	11
Petroleum Refining Engineering (DC) (CH281)	3	0	0	9
DE-1: Fundamentals of Polymer & Petrochemicals (DE) (CH191)	2	0	0	6
Heat Transfer Operations (DC) (CH231)	3	1	0	11
Chemical Reaction Engineering-1 (DC) (CH251)	2	1	0	8
Professional Communication (LM) (PC101)	2	1	0	8
Chemical Reaction Engineering Lab (DC) (CH251L)	0	0	2	2
Heat Transfer Operation Lab (DC) (CH231L)	0	0	2	2
Total Credits				**66**

Semester 5 (3rd Year: Odd Sem)

Course/Subject	L	T	P	Cr
Mass Transfer Operations-2 (DC) (CH375)	3	0	0	9
Chemical Reaction Engineering-2 (DC) (CH352)	2	1	0	8
Chemical Process Technology-02 (DC) (395)	2	0	0	9
Equipment Design: Mechanical Aspects (DC) (CH313)	3	0	0	9
DE2: Petrochemical Process Technology (CH591)	2	0	0	6
Process Dynamics and Control (DC) (CH341)	3	1	0	11
Mass Transfer Operation Lab (DC) (CH274L)	0	0	2	2
Process Dynamics and Control Lab (DC) (CH341L)	0	0	2	2
Petrochemicals Lab (CH591L)	0	0	2	2
Total Credits				**58**

Semester 6 (3rd Year: Even Sem)

Course/Subject	L	T	P	Cr
Process Instrumentation (DC) (CH301)	2	0	0	6
Process Equipment Design (DC) (CH414)	2	0	0	6
Plant Design and Economics (DC) (CH413)	3	0	0	9
Corrosion Engineering (DC) (CH202)	2	0	0	6
DE 3: Polymer Synthesis & Properties (CH391)	2	1	0	8
DE 4: Polymer Processing (CH393)	2	0	0	6
Plant Design and Economics Lab (DC) (CH413L)	0	0	2	2
Polymers Lab (DC) (CH391L)	0	0	2	2
Process Equipment Design Project (DC) (CH414P)	0	0	2	2
Total Credits				**47**

Semester: Summer Term (3rd Year, after 6th Sem)

Course/Subject	L	T	P	Cr
Summer Internship Project (DP) (CH417)	0	0	10	10
Total Credits				**10**

Semester 7 (4th Year: Odd Sem)

Course/Subject	L	T	P	Cr
Open Elective-1 (Digital Technology) (OE) (CS443)	3	0	0	9
Open Elective-2 (Sustainability and Climate Change) (OE) (MT5213)	3	0	0	9
Organizational Psychology (HU) (HU331)	2	0	0	6
Foundations of Management (LM) (MT5405)	2	0	0	6
Sociology of Industry and Work Culture (HU) (HU313)	2	0	0	6
Principles of Economics (LM) (MT5100)	2	0	0	6
Total Credits				**42**

Semester 8 (4th Year: Even Sem)

Course/Subject	L	T	P	Cr
B.Tech. Project (DP) (CH418)	0	0	50	50
Total Credits				**50**

Department Electives (DE)

Course/Subject	L	T	P	Cr
DE 2: Non-Conventional Hydrocarbon Sources (CH509)	2	0	0	6
DE 3; Natural Gas Processing (CH481)	3	0	0	9
DE 3: Polymer Reaction Engineering	3	0	0	9
DE 4: Polymer Composites (CH491)	3	0	0	9
DE 4: Polymer Rheology (CH522)	3	0	0	9
DE 4: Fire, Safety and Hazard Analysis (CH201)	2	0	0	6
DE 4: Modelling Simulation and Optimization (CH443)	2	0	2	8
DE 4: Transport Phenomenon (CH401)	2	0	0	6
DE 4: Industrial Pollution and Control (CH402)	2	0	2	8